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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,358	12/03/2003	Tianyi Liao	LP 4820 US NA	6394

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EXAMINER	
PIZIALI, ANDREW T	
ART UNIT	**PAPER NUMBER**
1771	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/728,358	LIAO, TIANYI	
	Examiner	Art Unit	
	Andrew T. Piziali	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *1-8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/3/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 11/14/2005 has been entered. The examiner has withdrawn the objection to claim 9 based on the amendment to claim 9.

Election/Restrictions

2. Applicant's election of Group II, claims 9-20, in the reply filed on 11/14/2005, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of USPN 5,896,634 to Brodowski et al. (hereinafter referred to as Brodowski).

Regarding claims 9-20, Strachan discloses a composite yarn comprising at least one elastomeric fiber forming a strand with a total draft in a range from 1.2X to 6.2X of an original spun length of the strand; at 1east one hard yarn selected from the group consisting of: synthetic fibers, natural fibers and a blend of synthetic and natural fibers, wherein said hard yarn is aligned

adjacent and substantially parallel to said strand to make an aligned yarn (see entire document including column 2, lines 3-68 and column 5, lines 32-39).

Strachan discloses that a size material should not be applied prior to the entangling process, but Strachan discloses that certain finishes may be applied which do not prevent the hard yarns from opening during the entanglement process (column 6, lines 52-59). Strachan also discloses that when a lower tension is applied to the composite yarn the feeding of the yarn into the knitting or weaving may be impaired and the fabric quality may be degraded (paragraph bridging columns 7 and 8). Considering that Brodowski discloses that it is known in the art to apply a size material to a composite yarn to result in easy weavability (see column 1, lines 45-68), it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a size material to the composite yarn of Strachan, after the entangling process, because the size material allows for easy weavability of the composite yarn.

Regarding claim 10, Strachan discloses that the elastomeric strand may be a spandex yarn of a denier of from 20 to 140 before stretching and that the hard yarn may have a total denier of from 45 to 900 (see Examples).

Regarding claim 11, Brodowski discloses that a wax may be added to the sizing agent to further improve weavability (column 1, lines 45-67).

Regarding claim 12, Brodowski does not specifically disclose that the sizing agent is applied as a coating, but the examiner takes Official Notice that sizing agents are conventionally applied as coatings.

Regarding claims 13-20, Strachan discloses that the composite yarns may be used to form

woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1 to 1:4, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17-20, Brodowski discloses that the size material is washed away after final finishing (bare strands) (column 1, lines 45-67). Strachan discloses that the yarns may not be twisted (paragraph bridging columns 3 and 4).

Regarding claims 18 and 20, Strachan discloses that the fabric may be used as a garment (column 11, lines 11-22).

5. Claims 9-10 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of Japanese Patent No. 4 733 754 to Nakatomi et al. (hereinafter referred to as Nakatomi).

Regarding claims 9-10 and 12-20, Strachan discloses a composite yarn comprising at least one elastomeric fiber forming a strand with a total draft in a range from 1.2X to 6.2X of an original spun length of the strand; at least one hard yarn selected from the group consisting of: synthetic fibers, natural fibers and a blend of synthetic and natural fibers, wherein said hard yarn

is aligned adjacent and substantially parallel to said strand to make an aligned yarn (see entire document including column 2, lines 3-68 and column 5, lines 32-39).

Strachan discloses that a size material should not be applied prior to the entangling process, but Strachan discloses that certain finishes may be applied which do not prevent the hard yarns from opening during the entanglement process (column 6, lines 52-59). Strachan also discloses that when a lower tension is applied to the composite yarn the feeding of the yarn into the knitting or weaving may be impaired and the fabric quality may be degraded (paragraph bridging columns 7 and 8). Considering that Nakatomi discloses that it is known in the art to apply a size material to a composite yarn to result in easy weavability (see entire document), it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a size material to the composite yarn of Strachan, after the entangling process, because the size material allows for easy weavability of the composite yarn.

Regarding claim 10, Strachan discloses that the elastomeric strand may be a spandex yarn of a denier of from 20 to 140 before stretching and that the hard yarn may have a total denier of from 45 to 900 (see Examples).

Regarding claim 12, Nakatomi does not specifically disclose that the sizing agent is applied as a coating, but the examiner takes Official Notice that sizing agents are conventionally applied as coatings.

Regarding claims 13-20, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the

geometry (column 10, lines 41-48). Absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1 to 1:4, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17-20, Nakatomi discloses that the PVA material is washed away after final finishing (bare strands) (column 1, lines 45-67). Strachan discloses that the yarns may not be twisted (paragraph bridging columns 3 and 4).

Regarding claims 18 and 20, Strachan discloses that the fabric may be used as a garment (column 11, lines 11-22).

6. Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of USPN 3,719,664 to Hayes et al. (hereinafter referred to as Hayes).

Regarding claims 9-16, Strachan discloses a composite yarn comprising at least one elastomeric fiber forming a strand with a total draft in a range from 1.2X to 6.2X of an original spun length of the strand; at least one hard yarn selected from the group consisting of: synthetic fibers, natural fibers and a blend of synthetic and natural fibers, wherein said hard yarn is aligned adjacent and substantially parallel to said strand to make an aligned yarn (see entire document including column 2, lines 3-68 and column 5, lines 32-39).

Strachan discloses that a size material should not be applied prior to the entangling process, but Strachan discloses that certain finishes may be applied which do not prevent the hard yarns from opening during the entanglement process (column 6, lines 52-59). Strachan also discloses that when a lower tension is applied to the composite yarn the feeding of the yarn into the knitting or weaving may be impaired and the fabric quality may be degraded (paragraph bridging columns 7 and 8). Considering that Hayes discloses that it is known in the art to apply a size material to a yarn to result in easy weavability (column 1, lines 5-43), it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a size material to the composite yarn of Strachan, after the entangling process, because the size material allows for easy weavability of the composite yarn.

Regarding claim 10, Strachan discloses that the elastomeric strand may be a spandex yarn of a denier of from 20 to 140 before stretching and that the hard yarn may have a total denier of from 45 to 900 (see Examples).

Regarding claim 12, Hayes discloses that the sizing agent is applied as a coating (column 1, lines 26-43).

Regarding claims 13-16, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a

ratio of from 1:1 to 1:4, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

7. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of USPN 5,896,634 to Brodowski as applied to claims 9-20 above, and further in view of USPN 3,867,242 to Miller.

Regarding claims 13-20, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Strachan does not specifically mention the use of composite yarns and hard yarns in the warp and/or weft direction, but Miller discloses that it is known in the art to alternate elastomeric and non-elastomeric fibers (1:1 ratio) in the warp and/or weft direction to produce the desired fabric characteristics (see entire document including the paragraph bridging columns 4 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17-20, Brodowski discloses that the size material is washed away after final finishing (bare strands) (column 1, lines 45-67). Strachan discloses that the yarns may not be twisted (paragraph bridging columns 3 and 4).

Regarding claims 18 and 20, Strachan discloses that the fabric may be used as a garment (column 11, lines 11-22).

8. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of Japanese Patent No. 4 733 754 to Nakatomi as applied to claims 9-10 and 12-20 above, and further in view of USPN 3,867,242 to Miller.

Regarding claims 13-20, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Strachan does not specifically mention the use of composite yarns and hard yarns in the warp and/or weft direction, but Miller discloses that it is known in the art to alternate elastomeric and non-elastomeric fibers (1:1 ratio) in the warp and/or weft direction to produce the desired fabric characteristics (see entire document including the paragraph bridging columns 4 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17-20, Nakatomi discloses that the PVA material is washed away after final finishing (bare strands) (column 1, lines 45-67). Strachan discloses that the yarns may not be twisted (paragraph bridging columns 3 and 4).

Regarding claims 18 and 20, Strachan discloses that the fabric may be used as a garment (column 11, lines 11-22).

9. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of USPN 3,719,664 to Hayes as applied to claims 9-16 above, and further in view of USPN 3,867,242 to Miller.

Regarding claims 13-16, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Strachan does not specifically mention the use of composite yarns and hard yarns in the warp and/or weft direction, but Miller discloses that it is known in the art to alternate elastomeric and non-elastomeric fibers (1:1 ratio) in the warp and/or weft direction to produce the desired fabric characteristics (see entire document including the paragraph bridging columns 4 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Response to Arguments

10. Applicant's arguments filed 11/14/2005 have been fully considered but they are not persuasive.

The applicant requests that specific reference documentation be identified to support the Official Notice taken by the examiner. In particular, the applicant requests specific reference documentation to support the statement that sizing agents are conventionally applied as coatings. The examiner directs the applicant to USPN 3,719,664 to Hayes (column 1, lines 26-43) wherein Hayes discloses that sizing agents are conventionally applied as coatings. The examiner also directs applicant to page 9, lines 1-2 of the Office Action mailed on 7/12/2005, wherein Hayes is cited as disclosing that sizing agents are conventionally applied as coatings. It is noted that in the response filed on 11/14/2005, the applicant did not dispute this clear teaching of Hayes.

The applicant asserts that Strachan does not teach or suggest that a hard yarn is aligned adjacent and "substantially parallel" to a strand to make an aligned yarn. The examiner respectfully disagrees. Strachan discloses that the hard yarn is aligned "substantially parallel" with the strand (column 2, lines 10-19).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

atp

12/14/05

ANDREW T. PIZIALI
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